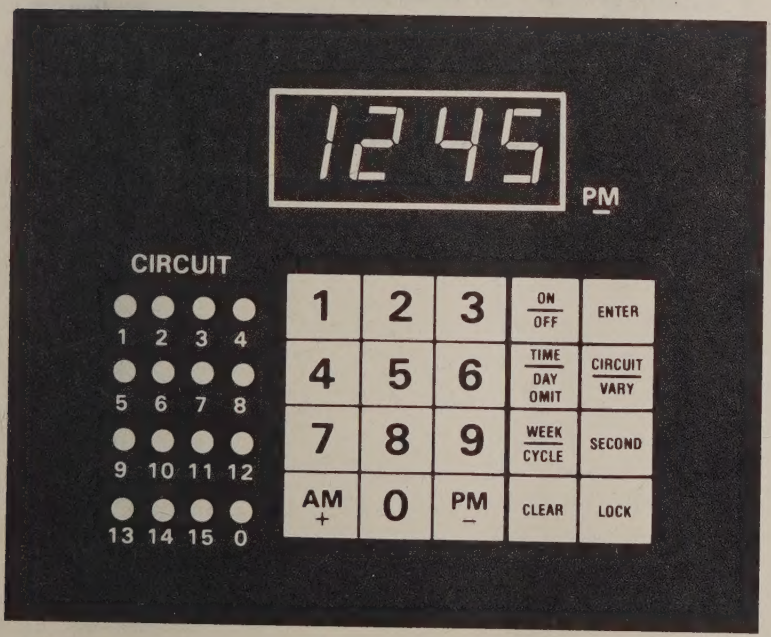
MP MASTER
MA34828

SE LABS CD-03

ChronTrol®

"CD" MODELS

OPERATOR'S GUIDE



IMPORTANT SAFEGUARDS

Basic safety precautions should always be followed when operating electrical equipment. Please observe the following safeguards:

- Read and save all instructions.
- To avoid electrical shock, do not immerse timer in water or other liquid and do not operate when wet.
- All equipment controlled by this timer must have wattage ratings within the capacity of this timer, as stated in the **SPECIFICATIONS AND INSTALLATION** instructions. Exceeding the rated capacity may result in overheating and damage.
- Do not use this timer where flammable gas or fumes exist.
- Do not use this timer to control equipment that is damaged or malfunctions.
- Extreme external interference can, in rare situations, cause random behavior. Do not use this timer in applications where random ON or OFF signals are potentially hazardous.

READ AND SAVE THESE INSTRUCTIONS

INTRODUCTION

ChronTrol is an electronic, microprocessor-based timer capable of performing a wide range of power-switching operations.

ChronTrol can be programmed to perform simple or complex time control operations. It has a wide range of capabilities and can perform many diverse functions. To obtain maximum benefit from your ChronTrol timer, please read and familiarize yourself with the programming procedures and capabilities described in this manual.

Refer to the enclosed **SPECIFICATIONS AND INSTALLATION** instructions for additional information about the ChronTrol model you own.

ChronTrol is easy to set and operate and will, with proper care, provide years of accurate, reliable service.

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OVERVIEW

As many as 40 individual Programs can be set and stored in ChronTrol's memory.

Each Program is set, reviewed, modified or cleared through ChronTrol's 20 key control panel.

ChronTrol's LED display provides a visual confirmation of all entries and can be used to review any Program's settings.

Each ChronTrol Program can contain some or all of the following operational parameters:

A Program number
A Circuit assignment
An ON or OFF time, or both, settable in hours, minutes and seconds
A weekly Day Omission schedule
A Cycle Length, settable in hours
An ON and/or OFF Variation, settable in minutes and seconds, + or –

A description of each parameter follows:

PROGRAM NUMBER

Each Program is assigned a unique number, from 1 through 40. This number is used to address a specific Program whenever you want to set, review, modify or clear that Program. Program numbers can be used in any order.

CIRCUIT ASSIGNMENT

Each Program can be assigned to control any one of ChronTrol's available Circuits.

Program-to-Circuit assignments can be made in any combination or sequence. One Program or more can be assigned to one Circuit, but no more than one Circuit can be controlled by a single Program.

Programs can be stored in ChronTrol's memory with a Circuit assignment of zero (no circuit assignment) on models with fewer than 16 Circuits. These stored Programs are not operational until a valid Circuit assignment is made.

CAUTION: On models with 16 available Circuits the 16th Circuit is assigned the Circuit number 00 (zero).

ON/OFF PROGRAM TIME SETTINGS

You can set as many as 40 separate ON/OFF Programs. An ON/OFF Program can contain just an ON or OFF time setting or both ON and OFF time settings.

Once set, an ON/OFF Program will repeat at the same time every day, 7 days a week.

If you want an ON/OFF Program to be omitted (skipped) on a certain day, or days, of the week use ChronTrol's Day Omission feature.

If you want an ON/OFF Program to cycle at some rate faster than every 24 hours, use ChronTrol's Cycle Length and/or Variation features.

DAY OMISSION

ChronTrol's Day Omission feature is used to omit a Program's operation on any day, or days, of the week.

If you plan on using Day Omission, please read the sections on "ADJUSTING THE WEEK LENGTH" and "CHANGING THE CURRENT DAY-OF-THE-WEEK."

REMEMBER: An ON/OFF Program will repeat daily if no Day Omission instructions are entered for that Program.

CYCLE LENGTH

ChronTrol's Cycle Length feature is used when you want a Program to cycle at some rate faster than every 24 hours.

Each ON/OFF Program can be set to cycle at hourly rates from 1 through 24 hours.

To set an ON/OFF Program's Cycle Length to the minute and second use Variation.

REMEMBER: If no Cycle Length setting is made for a Program it will repeat every 24 hours.

VARIATION

ChronTrol's Variation feature is used to set an ON/OFF Program's Cycle Length to the minute and second.

ON and/or OFF times can be set to + (advance) or – (retard), at rates from 1 second through 59 minutes 59 seconds.

Variation is used with a zero (oo) hour Cycle Length to perform short interval (less than 1 hour), repetitive switching operations.

Variation is used with a 24 hour Cycle Length to simulate photoperiodic variation (to adjust, automatically, for daily changes in the times of sunrise and sunset).

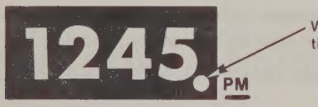
REMEMBER: If no Variation data is entered for a Program it will repeat based on its Cycle Length setting.

THE DISPLAY

ChronTrol's display serves two functions. Ordinarily it displays the current Time-of-Day in hours and minutes, a.m. or p.m.

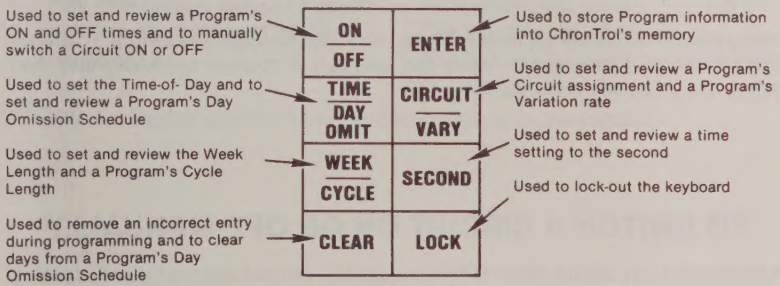
During programming, the display is used to confirm entries as they are made and to review program settings.

The LED indicator in the bottom right corner of the display is used to distinguish p.m. from a.m. times and retard (–) from advance (+) Variation settings. When illuminated, it indicates a p.m. time or a negative Variation setting.

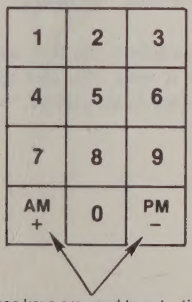


THE KEYBOARD

FUNCTION KEYS

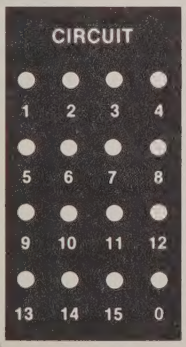

Used to set and review a Program's ON and OFF times and to manually switch a Circuit ON or OFF
ON / OFF
ENTER
Used to store Program information into ChronTrol's memory
Used to set the Time-of- Day and to set and review a Program's Day Omission Schedule
TIME / DAY OMIT
CIRCUIT / VARY
Used to set and review a Program's Circuit assignment and a Program's Variation rate
Used to set and review the Week Length and a Program's Cycle Length
WEEK / CYCLE
SECOND
Used to set and review a time setting to the second
Used to lock-out the keyboard
Used to remove an incorrect entry during programming and to clear days from a Program's Day Omission Schedule
CLEAR
LOCK

NUMERIC KEYS



These keys are used to set a time as a.m. or p.m. or a Variation rate as + or –

CIRCUIT STATUS INDICATORS



ChronTrol's front panel includes one LED indicator for each available Circuit. When illuminated, the LED indicates that a Circuit is "ON"

ELECTRICAL START-UP

Refer to the SPECIFICATIONS AND INSTALLATION instructions included with this manual. It will provide specific information about your model.

PROGRAMMING START-UP

At initial start-up or after any power interruption, ChronTrol's keyboard automatically locks. The keyboard can also be locked by pressing the LOCK key.

ChronTrol's keyboard must be unlocked before any program entries can be made.

UNLOCK CHRONTROL'S KEYBOARD AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the unlocking code numbers 1 0 3	The keyboard is now unlocked and ready to accept entries.

Many ChronTrol timers are also equipped with a mechanical key switch. To unlock the keyboard of this model, insert the key, turn it counter clockwise and then press the unlocking code numbers 103.

TO SWITCH A CIRCUIT ON OR OFF MANUALLY

You can turn any Circuit ON or OFF immediately, without waiting for or disturbing a programmed ON or OFF time.

MANUALLY SWITCH A CIRCUIT ON OR OFF AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Circuit number to be switched	The Circuit number pressed is displayed
2. Press ON/OFF	The Circuit is switched ON if it was OFF, or OFF if it was ON, and the current Time-of-Day is displayed.

SETTING THE TIME-OF-DAY

Included in the circuitry of your ChronTrol timer is a very accurate digital clock. This clock is used as the starting point for all programming procedures and as the reference point for all ON/OFF switching operations.

The Time-of-Day clock is set in hours, minutes and a.m. or p.m. You can also set the Time-of-Day to the second, if desired. For applications using TIME = 0:00:00 (zero hour) see the "INTERVAL TIMING" section on page 18 of this manual.

REMEMBER: Begin all programming sequences with the display reading the Time-of-Day. If you become lost or confused during any programming entry procedure, push the TIME key and start over.

SET THE TIME-OF-DAY AS FOLLOWS:

ACTION	DESCRIPTION
1. Press TIME	The Display is blank
2. Press the appropriate time in hours and minutes, AM or PM	The time, in hours and minutes, is displayed
*3. Press SECOND	00 is displayed
*4. Press the appropriate seconds	The seconds are displayed
5. Press ENTER	The Time-of-Day is set and displayed

*OPTIONAL: May be skipped if time-of-day is not set to the second.

ADJUSTING THE WEEK LENGTH

ChronTrol's Week Length is adjustable, from 1 through 8 days.

At initial start-up your timer begins operations on Day 1 of a 7-day Week. No further setting is required unless you want the Week Length to be shorter or longer than 7 days.

ADJUST THE WEEK LENGTH AS FOLLOWS:

ACTION	DESCRIPTION
1. Press WEEK	From left to right, the number of the current Day-of-the-Week and the Week Length are displayed
2. Press the desired Week Length in days, 1 through 8.	From left to right, Day 1 and the selected Week Length are displayed
3. Press ENTER	The Week Length information is stored and the Time-of-Day is displayed.

REVIEW THE WEEK LENGTH AS FOLLOWS:

ACTION	DESCRIPTION
1. Press WEEK	From left to right, the number of the current Day-of-the-Week and the Week Length are displayed
2. Press TIME	The review is completed and the Time-of-Day is displayed.

CHANGING THE CURRENT DAY-OF-THE-WEEK

At initial start-up, or whenever the Week Length has been changed, your timer assigns Day 1 to the current Day-of-the-Week. The other days of the week are then automatically numbered consecutively. For example, if you start your timer, or change its Week Length, on Friday, then Day 1 = Friday, Day 2 = Saturday, and so on with Day 7 = Thursday.

If you want Day 1 to equal some specific day of the week, you can manually adjust the Time-of-Day and advance the current Day-of-the-Week. Since a day runs from midnight (12:00:00 a.m.) to midnight, each time the clock runs through midnight the Day-of-the-Week advances one day.

ADVANCE THE CURRENT DAY-OF-THE-WEEK AS FOLLOWS:

ACTION	DESCRIPTION
1. Press TIME	The display is blank
2. Press 1 1 5 9 PM	1159. is displayed
3. Press SECOND	00. is displayed
4. Press 5 9	59. is displayed
5. Press ENTER	The Time-of-Day is set and displayed

Repeat this sequence for each Day-of-the-Week to be advanced. Be sure to reset the clock to the correct Time-of-Day after you have completed this procedure.

REVIEW THE CURRENT DAY-OF-THE-WEEK AS FOLLOWS:

ACTION	DESCRIPTION
1. Press WEEK	From left to right, the number of the current Day-of-the-Week and the Week Length are displayed
2. Press TIME	The review is completed and the Time-of-Day is displayed.

SETTING ON/OFF PROGRAMS

You can store up to 40 individual ON/OFF Programs in ChronTrol's memory. Each ON/OFF Program can contain the following information:

A Program number (1 through 40)
A Circuit assignment (1 through 15 and 0)
An ON or OFF time, or both.

Each Program can also contain specific Day Omission, Cycle Length and Variation instructions. If no Day Omission, Cycle Length or Variation instructions are entered for a specific ON/OFF Program, it will repeat at the same time every 24 hours, each day of the week.

Programmed ON and OFF times are set in hours, minutes, a.m. or p.m. and, if desired, seconds.

Always begin a Program setting sequence with the display reading the Time-of-Day.

SET AN ON/OFF PROGRAM AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the number of the Program you want set	The Program number selected is displayed
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for the selected Program
3. Press the Circuit number on which you want the Program to occur	The Circuit number selected is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for the selected Program
5. Press the desired ON time in hours and minutes, AM or PM	The ON time, in hours and minutes, is displayed
*6. Press SECOND	00 is displayed
*7. Press the desired seconds	The seconds are displayed
8. Press OFF	000 is displayed, if no previous OFF time has been set for the selected Program
9. Press the desired OFF time in hours and minutes, AM or PM	The OFF time, in hours and minutes, is displayed
*10. Press SECOND	00 is displayed
*11. Press the desired seconds	The seconds are displayed
12. Press ENTER	The selected Program's ON/OFF information is stored and the Time-of-Day is displayed.

NOTE: The ENTER key can be pressed at any time after STEP 3.

*Optional: May be skipped if ON/OFF times are not set or reviewed to the second.

REVIEW AN ON/OFF PROGRAM AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be reviewed	The Program number selected is displayed
2. Press CIRCUIT	The assigned Circuit number is displayed
3. Press ON	The ON time, in hours and minutes, is displayed
*4. Press SECOND	The ON time to the second is displayed
5. Press OFF	The OFF time, in hours and minutes, is displayed
*6. Press SECOND	The OFF time to the second is displayed
7. Press TIME	The review is completed and the Time-of-Day is displayed.

TO CHANGE AN ON/OFF PROGRAM:

Follow the same steps used to set an ON/OFF Program,entering the new values where appropriate. When the new values are entered the previous settings are automatically replaced.

TO CLEAR AN ON/OFF PROGRAM:

Follow the same steps used to set an ON/OFF Program, entering 0 (Zero) for each value to be cleared.

OMITTING AN ON/OFF PROGRAM

ChronTrol's Day Omission feature is used to omit (skip) the operation of any ON/OFF Program on any day, or days, of the week.

Recall that each day of the week is represented by a number, which is determined by the Week Length setting. This information is utilized when omitting an ON/OFF Program's daily operation.

Please note that a day is a 24-hour period from midnight (12:00:00 a.m.) to midnight. A Program whose ON or OFF times overlap midnight requires special setting considerations. Refer to the "SAMPLE PROGRAMS" section on pages 26 and 27 of this manual for additional information.

*Optional: May be skipped if ON/OFF times are not set or reviewed to the second.

OMIT AN ON/OFF PROGRAM AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be addressed	The Program number selected is displayed
2. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for the selected Program
3. Press the number corresponding to EACH day you want to omit	A code is displayed; refer to the DAY OMISSION CHART for interpretation
4. Press ENTER	The selected Program's Day Omission schedule is stored and the Time-of-Day is displayed.

REVIEW AN ON/OFF PROGRAM'S DAY OMISSION SCHEDULE AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number you want to review	The Program number selected is displayed
2. Press DAY OMIT	A code is displayed; refer to the DAY OMISSION CHART for interpretation
3. Press TIME	The review is completed and the Time-of-Day is displayed.

TO ADD DAYS TO A PROGRAM'S DAY OMISSION SCHEDULE:

If you want to add a day, or days, to a Program's Day Omission schedule, follow the same steps used to set the schedule, entering the additional day(s) to be omitted.

TO REMOVE DAYS FROM A PROGRAM'S DAY OMISSION SCHEDULE:

ACTION	DESCRIPTION
1. Press the Program number to be addressed	The Program number selected is displayed
2. Press DAY OMIT	A code is displayed; refer to the DAY OMISSION CHART for interpretation
3. Press the number corresponding to the day to be removed	A code is displayed
4. Press CLEAR	The displayed code changes as the day is cleared
REPEAT STEPS 3 AND 4 FOR EACH DAY TO BE REMOVED	
5. Press ENTER	The days cleared are removed from the selected Program's Day Omission schedule and the Time-of-Day is displayed.

DAY OMISSION CHART

DISPLAYED CODE	DAY OF THE WEEK 1	2	3	4	5	6	7	8
00								
01	X							
02		X						
03	X	X						
04			X					
05	X		X					
06		X	X					
07	X	X	X					
08				X				
09	X			X				
0A		X		X				
0b	X	X		X				
0C			X	X				
0d	X		X	X				
0E		X	X	X				
0F	X	X	X	X				
10					X			
11	X				X			
12		X			X			
13	X	X			X			
14			X		X			
15	X		X		X			
16		X	X		X			
17	X	X	X		X			
18				X	X			
19	X			X	X			
1A		X		X	X			
1b	X	X		X	X			
1C			X	X	X			
1d	X		X	X	X			
1E		X	X	X	X			
1F	X	X	X	X	X			
20						X		
21	X					X		
22		X				X		
23	X	X				X		
24			X			X		
25	X		X			X		
26		X	X			X		
27	X	X	X			X		
28				X		X		
29	X			X		X		
2A		X		X		X		
2b	X	X		X		X		
2C			X	X		X		
2d	X		X	X		X		
2E		X	X	X		X		
2F	X	X	X	X		X		
30					X	X		
31	X				X	X		
32		X			X	X		
33	X	X			X	X		
34			X		X	X		
35	X		X		X	X		
36		X	X		X	X		
37	X	X	X		X	X		
38				X	X	X		
39	X			X	X	X		
3A		X		X	X	X		
3b	X	X		X	X	X		
3C			X	X	X	X		
3d	X		X	X	X	X		
3E		X	X	X	X	X		
3F	X	X	X	X	X	X		

DISPLAYED CODE	DAY OF THE WEEK 1	2	3	4	5	6	7	8
40							X	
41	X						X	
42		X					X	
43	X	X					X	
44			X				X	
45	X		X				X	
46		X	X				X	
47	X	X	X				X	
48				X			X	
49	X			X			X	
4A		X		X			X	
4b	X	X		X			X	
4C			X	X			X	
4d	X		X	X			X	
4E		X	X	X			X	
4F	X	X	X	X			X	
50					X		X	
51	X				X		X	
52		X			X		X	
53	X	X			X		X	
54			X		X		X	
55	X		X		X		X	
56		X	X		X		X	
57	X	X	X		X		X	
58				X	X		X	
59	X			X	X		X	
5A		X		X	X		X	
5b	X	X		X	X		X	
5C			X	X	X		X	
5d	X		X	X	X		X	
5E		X	X	X	X		X	
5F	X	X	X	X	X		X	
60						X	X	
61	X					X	X	
62		X				X	X	
63	X	X				X	X	
64			X			X	X	
65	X		X			X	X	
66		X	X			X	X	
67	X	X	X			X	X	
68				X		X	X	
69	X			X		X	X	
6A		X		X		X	X	
6b	X	X		X		X	X	
6C			X	X		X	X	
6d	X		X	X		X	X	
6E		X	X	X		X	X	
6F	X	X	X	X		X	X	
70					X	X	X	
71	X				X	X	X	
72		X			X	X	X	
73	X	X			X	X	X	
74			X		X	X	X	
75	X		X		X	X	X	
76		X	X		X	X	X	
77	X	X	X		X	X	X	
78				X	X	X	X	
79	X			X	X	X	X	
7A		X		X	X	X	X	
7b	X	X		X	X	X	X	
7C			X	X	X	X	X	
7d	X		X	X	X	X	X	
7E		X	X	X	X	X	X	
7F	X	X	X	X	X	X	X	

DAY OMISSION CHART

DISPLAYED CODE	DAY OF THE WEEK 1	2	3	4	5	6	7	8
80								X
81	X							X
82		X						X
83	X	X						X
84			X					X
85	X		X					X
86		X	X					X
87	X	X	X					X
88				X				X
89	X			X				X
8A		X		X				X
8b	X	X		X				X
8C			X	X				X
8d	X		X	X				X
8E		X	X	X				X
8F	X	X	X	X				X
90					X			X
92	X				X			X
92		X			X			X
93	X	X			X			X
94			X		X			X
95	X		X		X			X
96		X	X		X			X
97	X	X	X		X			X
98				X	X			X
99	X			X	X			X
9A		X		X	X			X
9b	X	X		X	X			X
9C			X	X	X			X
9d	X		X	X	X			X
9E		X	X	X	X			X
9F	X	X	X	X	X			X
A0						X		X
A1	X					X		X
A2		X				X		X
A3	X	X				X		X
A4			X			X		X
A5	X		X			X		X
A6		X	X			X		X
A7	X	X	X			X		X
A8				X		X		X
A9	X			X		X		X
AA		X		X		X		X
Ab	X	X		X		X		X
AC			X	X		X		X
Ad	X		X	X		X		X
AE		X	X	X		X		X
Af	X	X	X	X		X		X
b0					X	X		X
b1	X				X	X		X
b2		X			X	X		X
b3	X	X			X	X		X
b4			X		X	X		X
b5	X		X		X	X		X
b6		X	X		X	X		X
b7	X	X	X		X	X		X
b8				X	X	X		X
b9	X			X	X	X		X
bA		X		X	X	X		X
bb	X	X		X	X	X		X
bC			X	X	X	X		X
bd	X		X	X	X	X		X
bE		X	X	X	X	X		X
bF	X	X	X	X	X	X		X

DISPLAYED CODE	DAY OF THE WEEK 1	2	3	4	5	6	7	8
C0							X	X
C1	X						X	X
C2		X					X	X
C3	X	X					X	X
C4			X				X	X
C5	X		X				X	X
C6		X	X				X	X
C7	X	X	X				X	X
C8				X			X	X
C9	X			X			X	X
CA		X		X			X	X
Cb	X	X		X			X	X
CC			X	X			X	X
Cd	X		X	X			X	X
CE		X	X	X			X	X
CF	X	X	X	X			X	X
d0					X		X	X
d1	X				X		X	X
d2		X			X		X	X
d3	X	X			X		X	X
d4			X		X		X	X
d5	X		X		X		X	X
d6		X	X		X		X	X
d7	X	X	X		X		X	X
d8				X	X		X	X
d9	X			X	X		X	X
dA		X		X	X		X	X
db	X	X		X	X		X	X
dC			X	X	X		X	X
dd	X		X	X	X		X	X
dE		X	X	X	X		X	X
dF	X	X	X	X	X		X	X
E0						X	X	X
E1	X					X	X	X
E2		X				X	X	X
E3	X	X				X	X	X
E4			X			X	X	X
E5	X		X			X	X	X
E6		X	X			X	X	X
E7	X	X	X			X	X	X
E8				X		X	X	X
E9	X			X		X	X	X
EA		X		X		X	X	X
Eb	X	X		X		X	X	X
EC			X	X		X	X	X
Ed	X		X	X		X	X	X
EE		X	X	X		X	X	X
EF	X	X	X	X		X	X	X
F0					X	X	X	X
F1	X				X	X	X	X
F2		X			X	X	X	X
F3	X	X			X	X	X	X
F4			X		X	X	X	X
F5	X		X		X	X	X	X
F6		X	X		X	X	X	X
F7	X	X	X		X	X	X	X
F8				X	X	X	X	X
F9	X			X	X	X	X	X
FA		X		X	X	X	X	X
Fb	X	X		X	X	X	X	X
FC			X	X	X	X	X	X
Fd	X		X	X	X	X	X	X
FE		X	X	X	X	X	X	X
FF	X	X	X	X	X	X	X	X

SETTING AN ON/OFF PROGRAM'S CYCLE LENGTH

At initial start-up your timer begins operations with a zero (00) hour Cycle Length for each ON/OFF Program. With no additional Cycle Length settings ON/OFF Programs will repeat at the same time every day (if no Day Omission instructions have been entered). A zero hour Cycle Length has the same operational effect as a twenty-four hour Cycle Length (if no Variation instructions have been entered).

If, however, you want an ON/OFF Program to cycle more frequently than every 24 hours, you must adjust its Cycle Length. Cycle Length settings are made in one hour increments, from zero (00) through twenty-four (24) hours. If you want to set a Program's Cycle Length to the minute and second, a Variation rate must also be entered for that Program. For additional information about Variation, refer to the section on "SETTING ON AND/OR OFF VARIATION."

An ON/OFF Program with a one (01) hour Cycle Length will repeat its operation every hour. A Program with a fifteen (15) hour Cycle Length will repeat its operation every 15 hours.

Each ON/OFF Program can contain its own specific Cycle Length setting.

SET A PROGRAM'S CYCLE LENGTH AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be addressed	The Program number selected is displayed
2. Press CYCLE	00 is displayed, if no previous Cycle Length setting has been made for the selected Program
3. Press the desired Cycle Length in hours, 0 through 24	The Cycle Length, in hours, is displayed
4. Press ENTER	The selected Program's Cycle Length is stored and the Time-of-Day is displayed.

REVIEW A PROGRAM'S CYCLE LENGTH AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be reviewed	The Program number selected is displayed
2. Press CYCLE	The Cycle Length, in hours, of the selected Program is displayed
3. Press TIME	The review is completed and the Time-of-Day is displayed.

TO CHANGE A PROGRAM'S CYCLE LENGTH:

Follow the same steps used to set a Program's Cycle Length, entering the new Cycle Length in place of the old. When the new value is entered, the previous setting is automatically replaced.

TO CLEAR A PROGRAM'S CYCLE LENGTH:

Follow the same steps used to set a Program's Cycle Length, entering 0 (zero) for the Cycle Length.

SETTING ON AND/OR OFF VARIATION

Variation is an important and useful feature of your ChronTrol Timer. Variation settings are made as a part of a Program's ON and/or OFF times, and are used in conjunction with that Program's Cycle Length to perform operations such as short interval, repetitive switching, photoperiodic simulation and to "fine tune" (set to the minute and second) a Program's Cycle Length.

Variation setttings are made in minutes and seconds, from 1 second through 59 minutes 59 seconds, + (advance) or – (retard). They can be programmed as a part of an ON/OFF setting procedure, or they can be programmed separately.

Variation settings are used in conjunction with a Program's Cycle Length to set the Program's Cycle Length to the hour, minute and second. The Cycle Length setting establishes the hourly cycle, while the Variation settings establish the cycle to the minute and second. For example, a Program with a five (5) hour Cycle Length and ON and OFF Variation of 3015+ would cycle every 5 hours, 30 minutes and 15 seconds.

Variation + setttings are used with a 00 (zero) hour Cycle Length to cycle a Program at rates from every 2 seconds (one second ON, one second OFF) through 59 minutes 59 seconds. The difference between the Program's ON and OFF times determines the duration of the "ON" period, while the Variation settings determine the rate at which the operation repeats. For example, if you want to turn Circuit #2 "ON" for 12 seconds every 29 minutes 45 seconds, you would set the ON time and then a Variation of 2945+, and then set the OFF time for 12 seconds after the ON time, and a Variation of 2945+.

+ (advance) and – (retard) Variation settings are used in conjunction with a 24-hour Cycle Length to simulate photoperiodic variation. To adjust for daily changes in the times of sunrise and sunset, a Program's ON and/or OFF times can be automatically advanced or retarded each day, at rates from 1 second through 59 minutes 59 seconds.

SET ON AND OFF VARIATION AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be addressed	The Program number selected is displayed
2. Press CIRCUIT	00 or the assigned Circuit number is displayed
3. Press ON	000 or the ON time in hours and minutes is displayed
4. Press VARY	0000 is displayed, if no previous ON time Variation setting has been made for the selected Program
5. Press the desired ON time Variation rate in minutes and seconds, + (advance) or – (retard)	The ON time Variation data is displayed in minutes and seconds
6. Press OFF	000 or the OFF time in hours and minutes is displayed

7. Press VARY	0000 is displayed, if no previous OFF time Variation setting has been made for the selected Program
8. Press the desired OFF time Variation rate in minutes and seconds, + (advance) or – (retard)	The OFF time Variation data is displayed in minutes and seconds
9. Press ENTER	The selected Program's ON and OFF Variation information is stored; the Time-of-Day is displayed.

NOTE: The ENTER key can be pressed at any time after STEP 5.

REVIEW A PROGRAM'S VARIATION SETTINGS AS FOLLOWS:

ACTION	DESCRIPTION
1. Press the Program number to be reviewed	The Program number selected is displayed
2. Press CIRCUIT	00 or the assigned Circuit number is displayed
3. Press ON	000 or the ON time in hours and minutes is displayed
4. Press VARY	The ON time Variation is displayed in minutes and seconds
5. Press OFF	000 or the OFF time in hours and minutes is displayed
6. Press VARY	The OFF time Variation is displayed in minutes and seconds
7. Press TIME	The review is completed and the Time-of-Day is displayed.

TO CHANGE A PROGRAM'S VARIATION SETTINGS:

Follow the same steps used to set ON and OFF Variation, entering the new Variation rate and direction where appropriate. When the new values are entered the previous settings are automatically replaced.

TO CLEAR A PROGRAM'S VARIATION SETTINGS:

Follow the same steps used to set ON and OFF Variation, entering 0 (zero) for ON and OFF Variation.

INTERVAL TIMING GUIDE

If your timer is equipped with an Interval button or contact you can use ChronTrol as an interval timer.

The Interval switch resets the Time of Day clock to 000:00 (zero hour) and counting, and advances the Day of the Week to the next day.

Although no operations will begin at time = 000:00, use this as a reference point for all interval settings.

You can set as many as 40 specific timing intervals (programs), assigning them to occur in any sequence or combination on up to 16 independent circuits.

Timed intervals are set and measured in hours, minutes and seconds. The length of an interval is determined by its ON (START) and OFF (STOP) time settings.

Programmed intervals can be set to begin from one second to one week after Interval switch activation.

The start of a programmed interval is determined by Interval switch activation and its ON (START) time setting.

For example, if a program's ON time is 000:05 (five seconds) and OFF time is 001:35 (one minute, thirty five seconds), then the program will begin 5 seconds after Interval switch activation and terminate 1 minute and 30 seconds later.

MULTIPLE STEP INTERVAL TIMING USING WEEK LENGTH AND DAY OMIT

ChronTrol's adjustable Week Length and Day Omit features can be used when two or more (up to 8) different timing sequences are involved in a given process or experiment.

Using these features you can program the number of steps in a process and their sequence of occurrence.

Recall that each Interval switch actuation resets the Time of Day to 000:00 (zero hour) and advances the Day of the week to the next day.

The number of steps in a process is determined by the Week length setting, and their sequence of occurrence is established by the Day Omission schedule of each step.

For example, if your process requires 3 different timed steps and the onset of each step is determined by outside factors, then set a 3-day Week **length** and omit days 2 and 3 from programs in Step one, days 1 and 3 from programs in Step two, and days 1 and 2 from programs in Step three.

Beginning operations with Day 3 of a 3-day Week setting, the first press of the Interval switch will activate programs in Step one, the second press Step two and so on with the fourth press activating Step one again. Each program occurs in sequence and is activated by the operator when appropriate.

TROUBLE-SHOOTING A CHRONTROL PROGRAM

If your ChronTrol Timer seems to malfunction, try the following trouble-shooting procedures before reporting a problem or returning the unit for service:

IF A PROGRAMMED ON/OFF OPERATION DOES NOT OCCUR:

1. Review the Program's ON and OFF time settings. Be certain to check the a.m./p.m. designation as well as the times.
2. Review the Program's Day Omission schedule to verify that the Program was supposed to occur.
3. Set the Time-of-Day clock to "walk through" the Program's ON and/or OFF times.

IF A PROGRAMMED ON/OFF OPERATION OCCURS AT AN INCORRECT TIME:

1. Review the Program's ON and OFF time settings. Be certain to check the a.m./p.m. designation as well as the times.
2. Review the Program's Cycle Length setting.
3. Review the Program's ON and OFF Variation settings, verifying both the rate and direction, or that the Variation settings are zero (0000) if they should be.

IF THE DISPLAY IS BLANK AND THE KEYBOARD CANNOT BE UNLOCKED:

1. Disconnect, or switch "OFF," the battery back-up system and momentarily kill the AC power.
2. Restore the AC power, connect fresh batteries or turn the battery switch to the "ON" (charge) position.
3. Reenter the Time-of-Day and Program information.

IF THE KEYBOARD DOES NOT RESPOND:

1. Push the numbers 103 and try keyboard again.

SAMPLE PROGRAMS

This section will provide the ChronTrol user with a wide variety of sample Programs. Some Programs are relatively simple, requiring minimal setting considerations; others are complex, requiring sophisticated setting procedures.

A description of the desired effect and step-by-step setting procedures are provided for each sample Program.

All the Times, Days Omitted, Cycle Lengths and Variation factors used in the following sample Programs are arbitrary and could be any values that your particular applications require.

All of the Day Omission settings made in the following sample Programs are based on Day 1 being Monday.

Your ChronTrol timer is extremely versatile and can be used to perform many other operations not described in this manual.

BASIC ON/OFF PROGRAM

DESIRED EFFECT: To turn Circuit #4 ON at 8:00:00 a.m. and OFF at 5:15:00 p.m., 7 days a week.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #4 and set the ON and OFF times. Program No. 1 is used in the following example:

ACTION	DESCRIPTION
1. Press 1	01 is displayed, for Program No. 1
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 1
3. Press 4	04 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 1
5. Press 800 AM	800 is displayed
6. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 1
7. Press 515 PM	515. is displayed
8. Press ENTER	Program No. 1's ON/OFF schedule is stored and the Time-of-Day is displayed.

If you want to limit Program No. 1's operation to Monday through Friday, make a Day Omission setting, omitting Saturday and Sunday:

ACTION	DESCRIPTION
1. Press 1	01 is displayed, for Program No. 1
2. Press DAY OMIT	00 is displayed, if no previous Day Omission setting has been made for Program No. 1
3. Press 6, 7 (for Sat. and Sun.)	60 is displayed
4. Press ENTER	Program No. 1's Day Omission schedule is stored and the Time-of-Day is displayed.

ON/OFF PROGRAM — WITH CYCLE LENGTH

DESIRED EFFECT: To turn Circuit #5 "ON" for 45 minutes, every one hour, 7 days a week. The operation is to begin at 10:00:00 a.m.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #5 and set the initial ON and OFF times. Then set the selected Program's Cycle Length for 1 hour.
Program No. 2 is used in the following example:

ACTION	DESCRIPTION
1. Press 2	02 is displayed, for Program No. 2
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 2
3. Press 5	05 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 2
5. Press 1000 AM	1000 is displayed
6. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 2
7. Press 1045 AM	1045 is displayed
8. Press ENTER	Program No. 2's ON/OFF schedule is stored and the Time-of-Day is displayed
9. Press 2	02 is displayed, for Program No. 2
10. Press CYCLE	00 is displayed, if no previous Cycle Length setting has been made for Program No. 2
11. Press 1	01 is displayed
12. Press ENTER	Program No. 2's Cycle Length is stored and the Time-of-Day is displayed.

ON/OFF PROGRAM — WITH 24-HOUR CYCLE LENGTH AND VARIATION

DESIRED EFFECT: To turn Circuit #6 ON at 6:30:00 p.m. and OFF at 11:00:00 p.m., 7 days a week. The ON time is to occur 1 minute 30 seconds later each day, to adjust for daily changes in the time of sunset.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #6, set the ON time and ON time Variation and then set the OFF time. Then set the selected Program's Cycle Length for 24 hours.
Program No. 3 is used in the following example:

ACTION	DESCRIPTION
1. Press 3	03 is displayed, for Program No. 3
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 3
3. Press 6	06 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 3
5. Press 630 PM	630. is displayed
6. Press VARY	0000 is displayed, if no previous ON time Variation has been set for Program No. 3
7. Press 130 +	0130 is displayed
8. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 3
9. Press 1100 PM	1100. is displayed
10. Press ENTER	Program No. 3's ON/OFF schedule is stored and the Time-of-Day is displayed
11. Press 3	03 is displayed, for Program No. 3
12. Press CYCLE	00 is displayed, if no previous Cycle Length setting has been made for Program No. 3
13. Press 24	24 is displayed
14. Press ENTER	Program No. 3's Cycle Length is stored and the Time-of-Day is displayed.

OFF PROGRAM — WITH DAY OMISSION

DESIRED EFFECT: To turn Circuit #7 OFF at 8:00:00 a.m. Monday, Wednesday, Friday and Saturday.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #7 and set the OFF time, then set the selected Program's Day Omission schedule. Program No. 4 is used in the following example:

ACTION	DESCRIPTION
1. Press 4	04 is displayed, for Program No. 4
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 4
3. Press 7	07 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 4
5. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 4
6. Press 800 AM	800 is displayed
7. Press ENTER	Program No. 4's OFF schedule is stored and the Time-of-Day is displayed
8. Press 4	04 is displayed, for Program No. 4
9. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 4
10. Press 2, 4, 7 (for Tues., Thurs., and Sun.)	4A is displayed
11. Press ENTER	Program No. 4's Day Omission schedule is stored and the Time-of-Day is displayed.

ON/OFF PROGRAM — WITH CYCLE LENGTH AND VARIATION

DESIRED EFFECT: To turn Circuit #8 "ON" for 3 minutes, every 4 hours, 10 minutes and 45 seconds, 7 days a week. The operation is to begin at 9:45:00 a.m.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #8, and set the ON time and ON time Variation, and OFF time and OFF time Variation. Then set the selected Program's Cycle Length for 4 hours.

Program No. 5 is used in the following example:

ACTION	DESCRIPTION
1. Press 5	05 is displayed, for Program No. 5
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 5
3. Press 8	08 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 5
5. Press 945 AM	945 is displayed
6. Press VARY	0000 is displayed, if no previous ON time Variation has been set for Program No. 5
7. Press 1045 +	1045 is displayed
8. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 5
9. Press 948 AM	948 is displayed
10. Press VARY	0000 is displayed, if no previous OFF time Variation has been set for Program No. 5
11. Press 1045 +	1045 is displayed
12. Press ENTER	Program No. 5's ON/OFF and Variation schedule is stored and the Time-of-Day is displayed
13. Press 5	05 is displayed, for Program No. 5
14. Press CYCLE	00 is displayed, if no previous Cycle Length has been set for Program No. 5
15. Press 4	04 is displayed
16. Press ENTER	Program No. 5's Cycle Length is stored and the Time-of-Day is displayed.

ON/OFF PROGRAM — WITH DAY OMISSION

DESIRED EFFECT: To turn Circuit #9 ON at 4:15:00 p.m. and OFF at 1:30:00 a.m., Monday through Friday.

PROGRAMMING APPROACH: Because Day Omission is used and the OFF time overlaps midnight, 2 separate Programs will be assigned to Circuit #9. One Program will contain the ON time and a Day Omission schedule, the other Program will contain the OFF time and a Day Omission schedule.
Program Nos. 6 and 7 are used in the following example:

ACTION	DESCRIPTION
1. Press 6	06 is displayed, for Program No. 6
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 6
3. Press 9	09 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 6
5. Press 415 PM	415. is displayed
6. Press ENTER	Program No. 6's ON time is stored and the Time-of-Day is displayed
7. Press 6	06 is displayed, for Program No. 6
8. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 6
9. Press 6, 7 (for Sat. and Sun.)	60 is displayed
10. Press ENTER	Program No. 6's Day Omission schedule is stored and the Time-of-Day is displayed.

NOW SET THE OFF PROGRAM AS FOLLOWS:

ACTION	DESCRIPTION
1. Press 7	07 is displayed, for Program No. 7
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 7
3. Press 9	09 is displayed.
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 7
5. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 7
6. Press 130 AM	130 is displayed

7. Press ENTER	Program No. 7's OFF time is stored and the Time-of-Day is displayed
8. Press 7	07 is displayed, for Program No. 7
9. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 7
10. Press 7, 1 (for Sun. and Mon.)	41 is displayed
11. Press ENTER	Program No. 7's Day Omission schedule is stored and the Time-of-Day is displayed.

NOTE: Remember, a day is a 24-hour period from 12:00:00 a.m. (midnight) to 12:00:00 a.m. Program No. 7 is omitted on Sunday and Monday, *not* Saturday and Sunday.

"INTERVAL" ON/OFF PROGRAM — WITH TIME = 0:00:00

DESIRED EFFECT: To turn Circuit #11 "ON" for 5 minutes, 35 seconds. Program to begin at TIME = 0:00:05.

PROGRAMMING APPROACH: This operation uses ChronTrol as an "interval" timer. Select a Program No., 1 through 40, assign it to Circuit #11 and set the ON time for 0:00:05 (5 seconds) and the OFF time for 0:05:40 (5 minutes 40 seconds).
After the ON and OFF times are set use the TIME = 0:00:00 entery procedure to initiate the Program.
Program No. 9 is used in the following example:

ACTION	DESCRIPTION
1. Press 9	09 is displayed, for Program No. 9
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 9
3. Press 11	11 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 9
5. Press SECOND	00 is displayed
6. Press 5	05 is displayed
7. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 9
8. Press 5	005 is displayed
9. Press SECOND	00 is displayed
10. Press 40	40 is displayed
11. Press ENTER	Program No. 9's ON/OFF schedule is stored and the Time-of-Day is displayed.

TO INITIATE THE PROGRAM MAKE THE FOLLOWING ENTRIES:

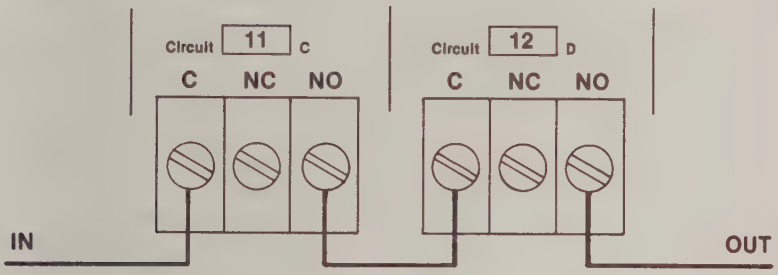
ACTION	DESCRIPTION
1. Press TIME	The display is blank
2. Press 0	000 is displayed
3. Press ENTER	The Time-of-Day is set to 0:00:00, and Program No. 9 will begin 5 seconds later at 0:00:05.

ON/OFF PROGRAMMING — WITH CIRCUIT OVERRIDE

DESIRED EFFECT: To turn Circuit #11 "ON" for 15 minutes every hour, from 8:00:00 a.m. to 6:00:00 p.m., Monday, Friday, Saturday and Sunday.

PROGRAMMING APPROACH: This effect requires the use of 2 Programs and 2 Circuits "wired in series."
One Program and Circuit are used to perform the 15 minutes "ON" out of every hour operation. The 2nd Program and Circuit are used to override the first Program/Circuit, limiting its operation to the 10-hour period from 8:00:00 a.m. to 6:00:00 p.m.
For this example Circuit #11 will be used for the 1-hour cycle and Circuit #12 will be used to override Circuit #11, using Program Nos. 16 and 17 respectively.
A wiring diagram and programming steps are provided as follows:

WIRING DIAGRAM



ACTION	DESCRIPTION
1. Press 16	16 is displayed, for Program No. 16
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 16
3. Press 11	11 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 16
5. Press 800 AM	800 is displayed
6. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 16
7. Press 815 AM	815 is displayed
8. Press ENTER	Program No. 16's ON/OFF schedule is stored and the Time-of-Day is displayed

9. Press 16	16 is displayed, for Program No. 16
10. Press CYCLE	00 is displayed, if no previous Cycle Length has been set for Program No. 16
11. Press 1	01 is displayed
12. Press ENTER	Program No. 16's Cycle Length is stored and the Time-of-Day is displayed.

Circuit #11 is now set to cycle "ON" 15 minutes, every 1 hour.

NOW PROGRAM CIRCUIT #12 TO OVERRIDE CIRCUIT #11 USING PROGRAM NO. 17.

ACTION	DESCRIPTION
1. Press 17	17 is displayed, for Program No. 17
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 17
3. Press 12	12 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 17
5. Press 800 AM	800 is displayed
6. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 17
7. Press 600 PM	600. is displayed
8. Press ENTER	Program No. 17's ON/OFF schedule is stored and the Time-of-Day is displayed
9. Press 17	17 is displayed, for Program No. 17
10. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 17
11. Press 2, 3, 4 (for Tues., Wed., and Thurs.)	OE is displayed
12. Press ENTER	Program No. 17's Day Omission schedule is stored and the Time-of-Day is displayed.

OFF PRIOR TO ON PROGRAM — WITH DAY OMISSION

DESIRED EFFECT: To turn Circuit #13 OFF at 6:00:00 p.m. and ON at 10:00:00 p.m., Saturday and Sunday only.

PROGRAMMING APPROACH: Select a Program No., 1 through 40, assign it to Circuit #13, and set the ON and OFF times. Then set the selected Program's Day Omission schedule.
Program No. 10 is used in the following example:

ACTION	DESCRIPTION
1. Press 10	10 is displayed, for Program No. 10
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 10
3. Press 13	13 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 10
5. Press 1000 PM	1000. is displayed
6. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 10
7. Press 600 PM	600. is displayed
8. Press ENTER	Program No. 10's ON/OFF schedule is stored and the Time-of-Day is displayed
9. Press 10	10 is displayed, for Program No. 10
10. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 10
11. Press 1, 2, 3, 4, 5 (for Mon., Tues., Wed., Thrus., and Fri.)	1F is displayed
12. Press ENTER	Program No. 10's Day Omission schedule is stored and the Time-of-Day is displayed.

PROGRAMMING FOR ON AND OFF PERIODS OVER 24 HOURS

DESIRED EFFECT: To turn Circuit #14 ON, Monday at 11:30:00 a.m. and OFF, Thursday at 4:15:00 p.m.

PROGRAMMING APPROACH: 2 separate Programs are assigned to Circuit #14. One Program will contain the ON time and a Day Omission schedule. The 2nd Program will contain the OFF time and a Day Omission schedule. Program Nos. 11 and 12 will be used in the following example:

ACTION	DESCRIPTION
1. Press 11	11 is displayed, for Program No. 11
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 11
3. Press 14	14 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 11
5. Press 1130 AM	1130 is displayed
6. Press ENTER	Program No. 11's ON time is set and the Time-of-Day is displayed
7. Press 11	11 is displayed, for Program No. 11
8. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 11
9. Press 2, 3, 4, 5, 6 and 7 (for Tues., Wed., Thurs., Fri., Sat., and Sun.)	7E is displayed
10. Press ENTER	Program No. 11's Day Omission schedule is stored and the Time-of-Day is displayed.

NOW SET THE OFF PROGRAM AS FOLLOWS:

ACTION	DESCRIPTION
1. Press 12	12 is displayed, for Program No. 12
2. Press CIRCUIT	00 is displayed, if no previous Circuit assignment has been made for Program No. 12
3. Press 14	14 is displayed
4. Press ON	000 is displayed, if no previous ON time has been set for Program No. 12
5. Press OFF	000 is displayed, if no previous OFF time has been set for Program No. 12
6. Press 415 PM	415. is displayed

7. Press ENTER	Program No. 12's OFF time is stored and the Time-of-Day is displayed
8. Press 12	12 is displayed, for Program No. 12
9. Press DAY OMIT	00 is displayed, if no previous Day Omission schedule has been set for Program No. 12
10. Press 1, 2, 3, 5, 6, 7 (for Mon., Tues., Wed., Fri., Sat., and Sun.)	77 is displayed
11. Press ENTER	Program No. 12's Day Omission schedule is stored and the Time-of-Day is displayed.

CHRONTROL SERVICE

ChronTrol service, during or after the warranty period, is available from Lindburg Enterprises, Inc., 9707-A Candida St., San Diego, CA 92126.

Should you have difficulty with ChronTrol, return it, postpaid, **WITH A DESCRIPTION** of the problem experienced.

Enclose $5.00 to cover shipping and handling charges on all returns. If under warranty, no additional charges will be made. Non-warranty repair costs will be advised for approval prior to correction and return.

CAUTION: There are no user serviceable parts inside a ChronTrol Timer. Servicing must be performed by a Lindburg Enterprises, Inc., Authorized Service Technician.

WARRANTY

ChronTrol Timers are warranted to be free from defects in workmanship or material under normal use and service, for a period of one (1) year from date of purchase by the user.

Lindburg Enterprises, Inc.'s obligation under this Warranty is limited to repairing or replacing at its Factory Service Center, any product which shall, within the time limit set forth above, be received at its Factory Service Center with transportation charges prepaid, provided that Lindburg Enterprises, Inc.'s examination discloses to its satisfaction that such product is defective.

Any adjustment or replacement of defective parts made under this Warranty does not void the Warranty; nor does it extend the original Warranty period.

This Warranty shall not extend to any ChronTrol product which has been tampered with or repaired by someone other than a Lindburg Enterprises, Inc., Authorized Service Technician, nor to any product which has been subject to misuse, neglect, accident or damage, or which has not been properly installed and tested in operation.

Under no circumstances shall Lindburg Enterprises, Inc., be liable to any purchaser or third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of, or as a result of, any defects in, or failure of, its products, or any part or parts thereof.

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